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ABSTRACT

A Bowie State College program to prepare black students for careers as physicians and dentists is described. The program will recruit seniors from predominantly black Maryland high schools to participate in an intensive summer program prior to college entrance, and will provide continuing services during the college years. Six phases of the program are considered: community outreach/recruitment, a pre-college summer session, an evening and weekend developmental program during the freshman and sophomore years, pairing students with community preceptors during the junior year, informal interviewing by medical and dental schools during the senior year, and followup of students admitted to medical/dental school. The summer program will emphasize math and science. Students will also participate in volunteer experiences at area hospitals, and will be matched with preceptors who are practicing doctors and dentists. In addition to career counseling, students will receive aid in completing medical/dental application forms, interview techniques, and studying for the medical/dental college admissions tests. One program objective is to help at least 30 percent of the program participants gain admittance to medical or dental schools. The budget and pre-medicine and pre-dentistry curriculum are outlined. (SW)

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A Pre-Med Program Model For A Small Historically Black College

by Wanda E. Gill

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1.0 Introduction

Although the number of black students admitted to medical and dental schools in the early seventies was on the increase, there has been a steady decline in spaces since the Bakke decision. In the 1977-1978 school year, there were twenty-one (21) fewer blacks admitted to medical schools as first year students. Indeed, Howard University and Meharry Medical Colleges still graduate the largest numbers of black doctors and dentists in Washington, D.C. (92% of dentists and 84% of doctors) and Tennessee (96% of dentists and 92% of doctors), respectively.

This recent retrogression is cause for alarm. Bowie State College, as an historical black college, is concerned with the need to better prepare students for the relatively few positions available at medical and dental schools. With such recognition comes a desire to implement at the institutional level a program designed to prepare black students for careers as physicians and dentists.

The Bowie State College Pre-Med/Pre-Dent Program will recruit fifty highly motivated seniors from predominantly black high schools in the state of Maryland for participation in an intensive summer program at Bowie State College, prior to college entrance. Once accepted at Bowie, the student will pursue enrichment courses, workshops, lectures and tutorials in the evenings and on week-ends. This highly specialized curriculum is designed to increase the probability of acceptance to medical or dental school. The program will attract recruiters from major medical and dental schools, in search of black talent.

1.1 Needs Statement

Although blacks comprise 12% of the U.S. population, black M.D.s represent 1.7% and black dentists represent .8% of all practicing doctors and dentists. The number of first year black medical students enrolled in the 1977-1978 school year decreased 1.9% while white medical school enrollment had a corresponding 2.5% increase for the same year.

With new state policies on functional literacy tests for high school graduation, tracking and dismissal policies, higher SAT scores for admission to four year institutions, 51% of all black undergraduates currently attending two year colleges and the unavailability of adequate student aid packages, the pool of black talent entering and completing the four year colleges has experienced a severe drop. In the 1976 school year, only 6.4% of all bachelor's degrees were awarded black graduates even though 8.4% of all entering freshmen in 1972 were black. Compounding the problem is the "brain drain" of black talent by schools offering prestige, primary resources and/or generous financial support. The remaining pool is severely limited because of inadequate high school preparatory programs in the basic sciences and racist counseling practices that encourage talented and gifted black students to prepare for careers far below their actual potential and/or foster students' attitudes of apathy, self worthlessness and inadequacy. Indeed, high school counselors rarely encourage black students to pursue careers in medicine and dentistry.

1.2 Programmatic Goals

- to recruit high school seniors for careers in medicine and dentistry.
- to interest, motivate and assist black students interested in careers as physicians and dentists.
- to provide an intensive summer program for high school seniors at the host college.
- to interest disadvantaged students in service to inner city and rurally isolated communities.
- to provide on-going career related counseling to program participants.
- to assure a minimum of 30% of Bowie State College Pre-Med/Pre-Dent students admission to medical or dental school.
- to foster the concern of local medical and dental schools in the programs and students of an historical black college.

1.3 The Objectives

- solicit prospective participants from predominantly black high schools.
- to motivate high school seniors to explore health related careers.
- expose students to positive role models via lectures and workshops on current topics in medicine and dentistry.
- provide students with volunteer experiences at area hospitals.
- to develop an eight week summer experience in math and science for high school seniors
- provide students with preceptors (practicing doctors and dentists who serve as "Big Brothers/Sisters")
- counsel students continually to reinforce the rewards of medicine and dentistry.
- emphasize the need for effective study methods to handle large volumes of materials.
- to mobilize area health care professionals and administrators to provide their resources and expertise to Bowie State College Pre-Med/ Pre-Dent Program students.
- to conduct workshops on completing the American Medical Application Service form, medical/dental college interview techniques and procedures, Study tips for the Medical College Aptitude Test and the Dental Aptitude Test.
- provide students with courses specifically designed to prepare them for the Medical College Aptitude Test or the Dental Aptitude Test.

1.4 The Program Design

The program's design is six phases.

Phase I is the community outreach/recruitment phase whereby program personnel conduct seminars on the actual project at area high schools, social clubs, fraternity and sorority meetings to interest students, parents and community leaders in the Pre-Med Program Model host college. Phase I will be conducted in the fall beginning in early October. All program personnel will assist in the recruitment effort. Program application forms and materials will be submitted by the end of January. In late February, students will be selected by the Admissions Committee which will consist of representatives from area medical and dental schools, the Vice President for Academic Affairs at the host college, the Math/Science Department Chairperson, the Project Director, members of the host College Math/Science Department Pre-Med/ Pre-Dent Advisory Committee, the Superintendent of the area public school system or his designate. The selection process will be completed by March 1 of each year.

Phase II is the summer session which runs for eight weeks from mid-June through mid-August. Participants are given four week cram sessions in Introduction to Biology, Physics, Introduction to Chemistry, Introduction to Human Anatomy, Math 103, Math 104, Study Skills, Latin-based Vocabulary Development and Testtaking Strategies. In addition, students are treated to special lectures and workshops conducted by visiting lecturers and the host college faculty. Two science classes per four week session will introduce students to college level and paced courses. The summer session will set the tone of the expected performance level and will increase participant motivation.

Phase III is the intensive developmental phase which occurs during the evenings and week-ends in the freshmen and sophomore years. The project

counselor will advise, program and monitor students during the first two academic years at the host school and in the field at the volunteer sites. Students will be placed as volunteers in local hospitals where they can observe the interrelationships of health care professionals first hand. This experience is intended to be highly qualitative in the nature of the assignments. The volunteer experience is provided early enough to motivate participants to continue. In addition, guest lecturers from Johns Hopkins, Georgetown, Howard and George Washington Medical and Dental Schools will present talks on "Current Issues in Medicine/Dentistry", "The Implications of Doctor's Unions", "Socialized Medicine", etc... Lecturers will be held on week-ends and in the evenings and will be mandatory for all participants. During the academic year, all Bowie State College Pre-Med/Pre-Dent students will take courses together to insure a competitive atmosphere and increase the group's comradery.

Phase IV is the junior year in which students are paired with preceptors in the community. Doctors and dentists practicing in the area are used as "Big Brothers/Sisters" to encourage students to pursue their dreams. Preceptors are encouraged to spend a minimum of one hour per month talking to students, sharing office or home time. Simultaneously, during Phase IV, students practice interview techniques with visiting hospital administrators and medical school deans and recruiters visiting Phase V students. Phase IV students take the MCAT prep course administered at Bowie State College by personnel from the Stanley H. Kaplan Center. The course should be taken in the fall prior to the fall MCAT. Scores will indicate areas needing additional work in the spring semester of the student's junior year and the senior year. Computer based individualized science instruction will be used to reinforce learning. Phase IV is critical in terms of program success. Those students who enter P Phase V or the senior year will have had ample exposure to the medical/dental

professions to want to work hard to pull up their scores on the MCAT.

Phase V is the senior year. Medical and dental schools will be invited to send their representatives to the host college campus to informally interview Bowie State College Pre-Med/Pre-Dent students. Although these sessions are rarely for medical/dental school admissions purposes, they do allow the students to practice the interview techniques taught and allow med/dent school guests to meet the students whose MCAT/DAT scores and AMCAS/DCAS applications they may later see. Phase V ends with the successful admission to medical/dental school. Phase VI is the follow-up of all participants admitted to medical or dental school. Any student not admitted is invited back to Bowie State College for more intensive training. The form of the training will include tutorial sessions with instructors, auditing key courses, utilizing computer terminals, etc.).

Students who are admitted to medical or dental school will have the option of signing authorization forms to permit the release of their grades from medical/dental school to the project. In addition, students will complete program questionnaires at the end of the year of medical/dental school to provide project personnel with feedback for the purpose of program improvement. This follow-up is extremely important for program evaluation.

1.5 Methodology

The project director will report directly to the Math/Science Department Chairperson. There is committed support for the project at the administrative, faculty and student levels.

Phase I

The director, assistant director, coordinator, and counselor of the project will share the responsibility for the recruitment effort. They will locate and contact principals at predominantly black high schools throughout the state of Maryland to schedule recruitment trips at assemblies, career days and science club meetings. Each staff person will provide interested students with application forms and program brochures. Students will submit a completed application form, transcripts of high school records, three letters of recommendation and a typed essay entitled "Why I Want To Become A Doctor or Dentist".

The completed files will be disseminated to Admissions Committee members along with a rating scale for each student folder. Admissions Committee members will rate each applicant and return all materials to the project director. Each Admissions Committee member will consider the following:

A. Eligibility Requirements

1. The applicant must be a senior at a predominantly black high school.
2. The applicant must be earning an academic diploma or its equivalent.
3. The applicant must be culturally, educationally or economically deprived.

B. Preference Statement

1. Preference will be given to honor roll students.
2. Preference will be given students with no health care professionals in their immediate family.

3. Preference will be given to the physically disabled.

C. Application Procedure

Each student will submit a completed application form, three letters of recommendation (two from high school math/science teachers) and an essay entitled "Why I Want To Become A Doctor or Dentist". In addition, any available standardized test scores and high school transcripts are to be forwarded to the project director.

D. Participant Selection

Participants will be selected by the Admissions Committee of the host college Pre-Med/Pre-Dent Program in the late spring. All applicants will be notified by mail of their acceptance or rejection.

Phase II

A pre-entry summer program for disadvantaged high school students will assist in narrowing the gap between high school and college adjustment and will provide students with academic courses early enough to identify and prescribe remedies for academic deficiencies. The summer program is intentionally rigorous to encourage a high level of productive and creative student activity.

Classes and workshops will be conducted Monday through Friday from 9-12. During the first four weeks, students will take the following non-credit enrichment (all but Math 103 and Math 104) courses:

9-10 Introduction to Biology

10-11 Study Skills

11-12 Physics

1-2 Latin-based Vocabulary Development

3-4 Workshop

During the second four week period, students will take the following courses:

9-10 Introduction to Chemistry

10-11 Study Skills

11-12 Introduction to Human Anatomy

1-2 Testtaking Strategies

2-3 Math 104 (for credit)

3-4 Workshop

Summer workshops will run from 3-4 p.m. They will be conducted by visiting lecturers and host college staff and faculty. Workshops will cover the following content areas:

-Motivational Techniques
-Decision Making
-Values Clarification
-Effective Communication Skills
-Medicine, A Profession
-Dentistry, A First Choice
-The role of Unions in Health Care Services
-Specialties in Medicine
-Specialties in Dentistry
-The American Medical Association
-The American Dental Association
-The National Medical Association
-The National Dental Association
-Nutrition: The Key to Preventive Medicine
-Stress and Disease
-Health Care Opportunities for the Disadvantaged: Project Success
-Medical School Admissions-Post Bakke
-Auxiliary Health Professions
-Health/Hospital Administration
-Minority Retention in Medical and Dental Schools
-Financial Aid
-Undergraduate Pre-Med/Pre-Dent Associations

Study Skills and testtaking strategies will be emphasized to underscore the importance of these skills for success prior to and upon entrance to medical/dental school.

Phase III

Volunteer times will be arranged according to the student's schedule and medical specialty interest area, for Saturday or Sunday two hour sessions throughout the freshmen and sophomore years.

The computer based units for study skills, biology and chemistry will be utilized for course work reinforcement, particularly in math and science.

In addition, guest lecturers will visit the College campus to discuss current issues in medicine and dentistry. These sessions will be held on alternate Saturday mornings.

The project participant will take the following courses during the first two academic years:

	Fall Semester	Spring Semester
Freshmen	Biological Science 100	General Botany 105
	Zoology 103	Zoology 104
	English 101	English 102
	Orientation	Precalculus
	Physical Education	Physical Education
	Speech 101	Speech 102
Total Hours	15 credits	18 credits

	Fall Semester	Spring Semester
Sophomore	Calculus I	Calculus II
	General Physics I	General Physics II
	General Chemistry I	General Chemistry II
	Genral Chemistry Lab	General Chemistry Lab
	Role of Chromosomes in Heredity	Molecular Biology
Total Hours	17 credits	17 credits

Phase IV

Phase IV occurs during the student's junior year. It consists of MCAT/DAT preparatory courses, preceptor experiences and computer terminal reinforcement in the sciences.

The preceptor experiences will be arranged for the spring semester of the junior year depending on the schedules of the doctor/dentist and individual student. Time commitments will vary with individual doctors/dentists. However, they will be asked to give a minimum of one hour per month per student. In addition to the preceptor experience, students will use the computer based system to reinforce learning previously learned and currently taught. Since the "PLATO" system is individualized, the student can work as the need arises and as time permits.

The Kaplan MCAT/DAT preparatory course will be conducted at the College for ten weeks in the fall. Students will meet with personnel from the Kaplan Center from 9-12 on Saturday mornings. Kaplan personnel provide students with techniques for handling test items similar to those on the MCAT/DAT. Students will be expected to write reports on these sessions and keep a time sheet of hours spent studying the materials provided and listening to the tapes. Results of the first year MCAT prep course will determine justification for the expense in later year groups.

During the junior year, the student will enroll at Bowie in the following courses:

Fall Semester		Spring Semester	
Histology		Biology of Drug Plants	
Organic Chemistry I		Organic Chemistry II	
Organic Chemistry Lab		Organic Chemistry Lab	
General Physiology		Microbiology I	
Comparative V. Anatomy		Comparative V. Anatomy	
Human Anatomy & Physiology		Human Anatomy & Physiology	
Total Hours	18 credits		19 credits

Phase V

Phase V is the senior year. Students will be interviewed by medical/dental school representatives on the campus of the host college. In addition, program personnel and outside consultants will present Saturday workshops on the AMCAS and DCAS application forms, interview techniques and testtaking strategies for the MCAT/DAT. This phase represents further student reinforcement. Students will be admitted to medical and dental schools.

Phase VI

Phase VI is the follow-up at medical or dental school. Students are asked to complete and submit project appraisal forms emphasizing program relevance to the medical/dental school curriculum. In addition, medical and dental schools send past participants' grades to the project director. Medical/dental students who have gone through the program are encouraged to return and share their experiences with students participating in Phases II-V.

As additional students enter each year of the program, phases will overlap. Staff at the institution and in the project may have to be added to facilitate this increased student work load.

1.6 Evaluation

Reading pre- and post-test scores on the Nelson Denny will be secured on each student by the reading specialist prior to and immediately following his critical reading course. In addition, the SAT will be administered at the beginning and end of the summer session (Phase II) to see if the enrichment program made any overall impact. Student rating scales will be ascertained at the conclusion of each workshop.

Appropriate pre-tests in the sciences will be given prior to and immedi-

ately following any computer-based learning reinforcement schedule implementation.

Simulated MCAT/DAT tests will be administered prior to the Kaplan crash course. The MCAT/DAT will be taken immediately following the Kaplan course.

The teacher's evaluation of class performance will be reflected in grades on teacher made quizzes and exams subsequent college grades for courses completed.

The project participants will constantly undergo evaluation to familiarize them with testing situations and reduce test anxiety.

1.7 Staffing Pattern

The Director of the College Pre-Med/Pre-Dent Program is responsible for total program implementation. The director is a member of the National Association of Medical Minority Educators (NAMME). The director will spearhead community based efforts to publicize the program. The director will participate in health care fairs and seminars. He/she will meet on a regular basis with faculty and staff at the College and from cooperating institutions. The director will supervise staff; initiate staff development workshops and authorize payroll expenditures. The director will be responsible for locating sources for all subsequent project funding. In addition, the director will teach one basic science course per year at Bowie State College.

The qualifications include a Ph.D. in a pure science and three years of previous experience with culturally, educationally, socially or economically deprived students.

The Assistant Director is responsible for all proposal and report writing. In addition, the assistant director will supervise all staff, in the absense

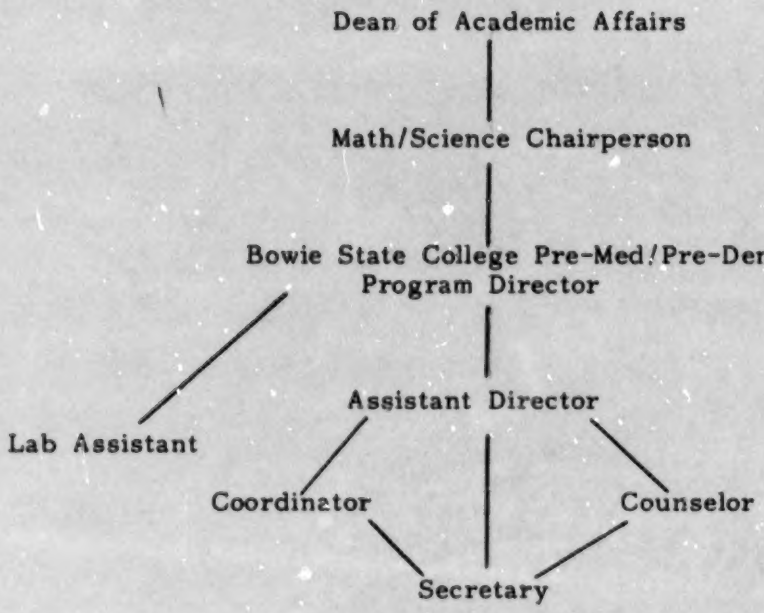
of the director. He/she will spearhead the program recruitment effort and will work colsely with the Housing Office, Financial Aid and Admissions Offices to assist project participants. In addition, the assistant director is responsible for securing, supervising and administering all standardized tests utilized by the program. The assistant director will report directly to the Director of the Bowie State College Pre-Med/Pre-Dent Program.

The coordinator is responsible for the daily implementation of the project. The coordinator will develop a list of volunteer sites and preceptors, place students with preceptors and at volunteer sites, conduct community based seminars, arrange medical/dental school visitations, assist in interviewing project applicants, assist in testing participants and carry out the director's instructions.

The lab assistant will conduct all science laboratories and supervise all project participants. In addition, the lab assistant will tutor all project participants on science lab procedures and experiments. The lab assistant will maintain a healthful environment.

The counselor will maintain an active file of medical and dental school catalogues, assist in test administration, provide career and personal counseling, conduct role playing interview workshops, advise, program and follow Phase III students. The counselor will assist the assistant director in maintaining all standardized test scores. The counselor should have an M.A. in Guidance and Counseling or a related field and three years of experience working with disadvantaged students.

The secretary will maintain office files, type all letters of correspondence, type and duplicate all application forms and drafts of brochures, letters of recommendation, proposals, reports, etc.. The secretary should be a high school graduate with two years of experience in an office setting.



1.8 Budget

1. Staff Salaries

   Director

   Assistant Director

   Lab Assistant

   Coordinator

   Counselor

   Secretary

   Category Sub Total

2. Consultant Costs

   a. consultant fees to be paid to the Stanley Kaplan Center to prepare 50 students for 42 hours preparation for the MCAT/DAT examination.

   b. reading consultant, Dr. Shearin of VICORE, Inc. for Speed Reading course during the summer session.

   c. Dr. Henry Frierson of University of North Carolina Medical College for consultant fees plus airfare and lodging.

d. guest lecturers.

Category Subtotal

3. Supplies:

Office Supplies
Microscopes
Dissection Kits

Category Subtotal

4. Student Stipends

weekly for 8 weeks for 50 students

Category Subtotal

5. Direct Costs

Xeroxing
Printing of brochures,
Handbooks, etc.
Faculty Orientation
Sessions
Admissions Committee meeting

Category Subtotal

6. Travel

Recruitment Trips/
Community Outreach

NAMME meetings, etc.

Category Subtotal

7. Computer Terminals

(8 terminals-PLATO system)
(Control Data Corporation)

Category Subtotal

GRAND TOTAL

Appendix A

Pre-medicine or Pre-dentistry

Freshman Year

First Semester		Hrs.	Second Semester		Hrs.
9500.101	Orientation to College	1	1701.105	Pre-calculus	4
1701.104	Math Analysis II	3	1501.102	English Comp. & Lit. II	3
1905.107	General Chem. I Lec.	3	1905.108	General Chem. II Lec.	3
1905.170	General Chem. I Lab.	2	1905.180	General Chem. II Lab.	2
1501.101	Reading & Comp. I	3	0401.104	General Zoology II	4
Physical Education Activities		1	Physical Education Activities		1
0401.103	General Zoology I	4			
		17			17

Sophomore Year

First Semester		Hrs.	Second Semester		Hrs.
1701.201	Calculus I	4	2207.130	Intro. to Pol. Sci.	3
2205.110	World Civilization I	3	1905.202	Organic Chem. II Lec.	3
1905.201	Organic Chem. I Lec.	3	1905.220	Organic Chem. II Lab.	2
1905.210	Organic Chem. I Lab.	2	0401.306	Embryology	4
0401.105	General Botany	4	1509.101	Intro. to Philosophy	3
Physical Education Activities		1	1501.103	Tech. & Report Writing	3
		17			18

Junior Year

First Semester		Hrs.	Second Semester		Hrs.
1102.101	First Year French I	3	1102.102	First Year French II	3
1905.301	Quantitative Anal. Lec.	3	1905.302	Instrumental Anal.	4
1905.311	Quantitative Anal. Lab	2	0401.305	Genetics & Pop. Biol.	4
1902.203	General Physics I	4	1902.204	General Physics II	4
0401.310	General Physiology	4			
		16			15

Senior Year

First Semester		Hrs.	Second Semester		Hrs.
1102.201	Second Year French I	3	1102.202	Second Year French II	3
0401.401	Bacteriology	4	0401.302	Histology	4
1905.309	Biochemistry I Lec.	3	1905.310	Biochemistry II Lec.	3
1905.390	Biochemistry I Lab.	2	1905.312	Biochemistry II Lab.	2
1701.109	Computer Prog. I	3	0401.403	Seminar	2
		15			14